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MEAN WELL

60W Single Output Encapsulated Type

# IRM-60 series



LPS ( except for 5V ) c UL us TÜV CB CE

## Features

- Universal AC input / Full range
- Compact size
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Isolation Class II
- No load power consumption<0.1W
- Pass LPS(Except for 5V)
- 100% full load burn-in test
- High reliability
- 3 years warranty

## Applications

- Industrial electrical equipment
- Mechanical equipment
- Factory automation equipment
- Handheld electronic device

## Description

IRM-60 is a 60W miniature (87*52*29.5mm) AC-DC module-type power supply, ready to be soldered onto the PCB boards of various kinds of electronic instruments or industrial automation equipments. This product allows the universal input voltage range of 85~264VAC. The 94V-0 flame retardant plastic case and the fully-potted silicone enhance the heat dissipation and meet the anti-vibration demand up to 5G; moreover, it provides the fundamental resistance to dust and moisture.

With the high efficiency up to 91% and the extremely low no-load power consumption below 0.1W, IRM-60 series fulfills the worldwide regulation for the low power consumption requirement for electronics. The entire series is a Class II design (no FG pin), incorporating the built-in EMI filtering components, enabling the compliance with EN55022 Class B; the supreme EMC features keep the end electronic units from electromagnetic interference. In addition to the PCB mounting style model, IRM-60 series also offers the screw terminal style model (ST).

## Model Encoding

IRM - 60 - 5 ST

- Blank : PCB mounting style
- ST : Screw terminal style

- 5 : Output voltage
- 60 : Output wattage
- IRM : Series name

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# IRM-60 series

## SPECIFICATION

| MODEL | | IRM-60-5 | IRM-60-12 | IRM-60-15 | IRM-60-24 | IRM-60-48 |
|---|---|---|---|---|---|---|
| OUTPUT | DC VOLTAGE | 5V | 12V | 15V | 24V | 48V |
| | RATED CURRENT | 10A | 5A | 4A | 2.5A | 1.25A |
| | CURRENT RANGE | 0 ~ 10A | 0 ~ 5A | 0 ~ 4A | 0 ~ 2.5A | 0 ~ 1.25A |
| | RATED POWER | 50W | 60W | 60W | 60W | 60W |
| | RIPPLE & NOISE (max.) Note.2 | 80mVp-p | 120mVp-p | 120mVp-p | 150mVp-p | 240mVp-p |
| | VOLTAGE TOLERANCE Note.3 | ±2.5% | ±2.5% | ±2.5% | ±2.5% | ±2.5% |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% |
| | LOAD REGULATION | ±1.0% | ±1.0% | ±0.5% | ±0.5% | ±0.5% |
| | SETUP, RISE TIME | 1000ms, 30ms/230VAC 2000ms, 30ms/115VAC at full load | | | | |
| | HOLD UP TIME (Typ.) | 50ms/230VAC 12ms/115VAC at full load | | | | |
| INPUT | VOLTAGE RANGE | 85 ~ 264VAC | | | | |
| | FREQUENCY RANGE | 47 ~ 440Hz | | | | |
| | EFFICIENCY (Typ.) | 84% | 87.5% | 89% | 90% | 91% |
| | AC CURRENT (Typ.) | 1.8A/115VAC 1A/230VAC | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 30A/115VAC 60A/230VAC | | | | |
| | LEAKAGE CURRENT | < 0.25mA/240VAC | | | | |
| PROTECTION | OVERLOAD | 115%~160% rated output power | | | | |
| | | Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | |
| | OVER VOLTAGE | 5.25 ~ 6.75V | 12.6 ~ 16.2V | 15.75 ~ 20.25V | 25.2 ~ 32.4V | 50.4 ~ 64.8V |
| | | Protection type : Shut off o/p voltage, clamping by zener diode | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70℃ (Refer to "Derating Curve") | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85℃, 10 ~ 95% RH | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 50℃) | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | |
| SAFETY & EMC | SAFETY STANDARDS | UL60950-1, TUV EN60950-1 approved | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3KVAC | | | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH | | | | |
| | EMC EMISSION | Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3 | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, heavy industry level (surge L-N : 1KV), criteria A | | | | |
| OTHERS | MTBF | 1226Khrs min. MIL-HDBK-217F (25℃) | | | | |
| | DIMENSION | PCB mounting style : 87*52*29.5mm (L*W*H) Screw terminal style : 109*52*33.5mm (L*W*H) | | | | |
| | PACKING | PCB mounting style : 0.23Kg;60pcs/14.8Kg/0.97CUFT Screw terminal style :0.27Kg;50pcs/14.5Kg/ CUFT | | | | |
| NOTE | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation. | | | | | |



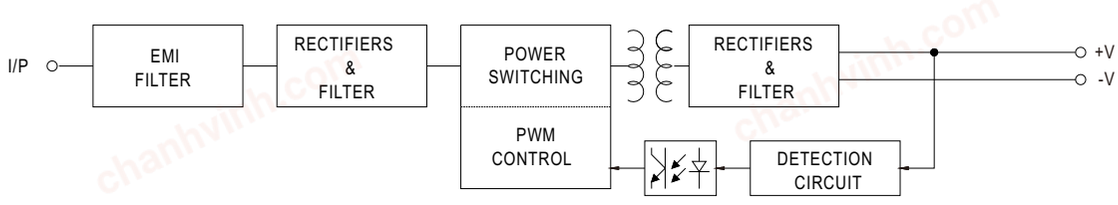
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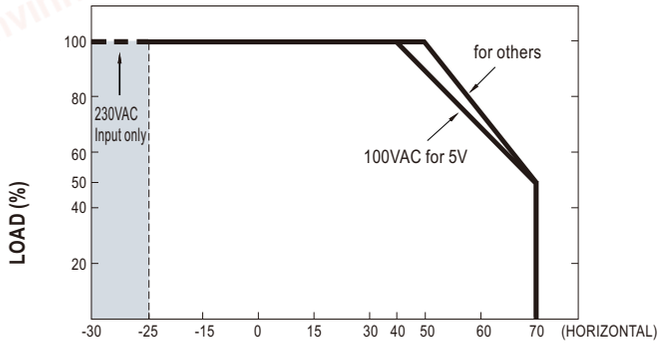


## ■ Block Diagram

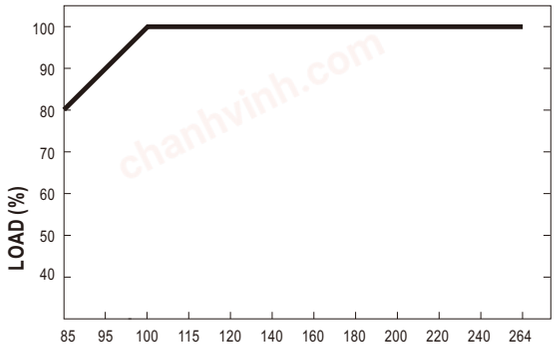
fosc : 65KHz




## ■ Derating Curve




## ■ Output Derating VS Input Voltage



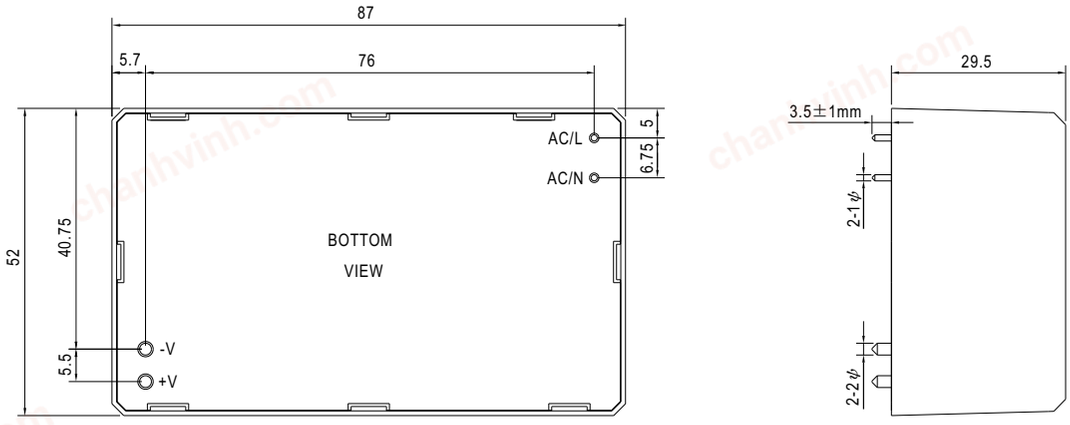
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## ■ Mechanical Specification

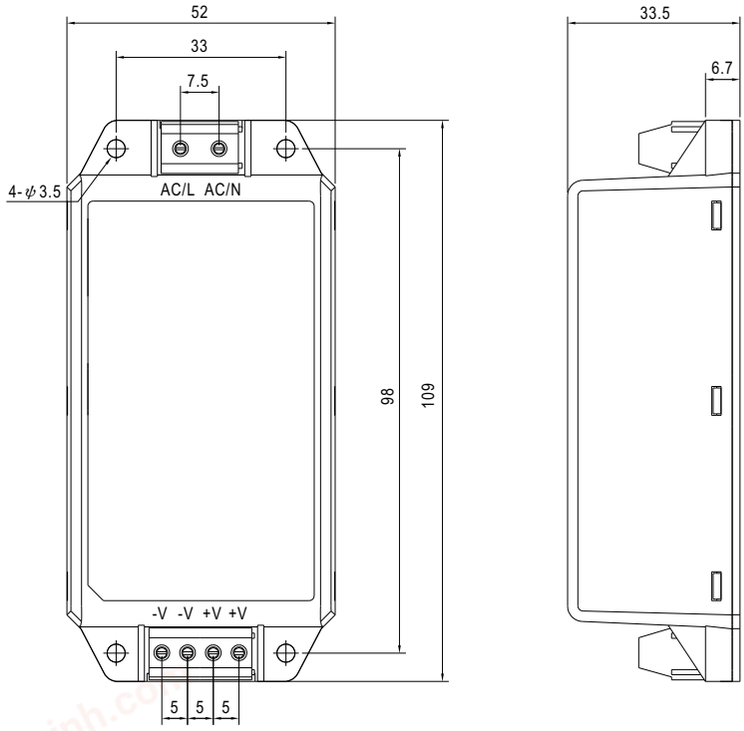
Case No.IRM60 Unit:mm

• **PCB mounting style**




AC/L, AC/N P/N diameter:1ψ
+V, -V P/N diameter:2ψ

• **Screw terminal style**




## ■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html